MANUAL

SCREENING THE VISION OF THE PRESCHOOL CHILD

Harold L. Friedenberg, O.D.
Chairman
Committee on Visual Problems of Children and Youth

American Optometric Association
7000 Chippewa Street
St. Louis, Missouri 63119

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AMERICAN OPTOMETRIC ASSOCIATION

POLICY ON VISION SCREENING

Vision being the child's principal avenue for learning, it is particularly important that during the academic years the process of seeing be periodically evaluated. The most reliable evaluation can best be achieved through regular professional examination.

Despite the cultural, social, and economic advances which have occurred in our society, many school age children are not receiving adequate professional visual care. To better identify the greatest number of visually inadequate children in the most efficient and most economic manner it is helpful to institute various vision screening procedures within our educational systems.

The responsibility for establishing and administering a proper vision screening program must be shared jointly by parents, school systems, and school health personnel--in conjunction with the local eye care practitioners. It is the responsibility of these disciplines to select a vision screening program which most adequately meets the needs of the children in their particular community. Most schools are concerned and want to have some form of vision screening in order to enhance the learning abilities of the students.

Individuals concerned with vision screening programs should constantly bear in mind the fact that vision screening is not to be confused with a complete visual examination. Passing a screening test does not necessarily indicate freedom from a visual problem; similarly, inability to pass the screening does not necessarily indicate the presence of a visual problem, but rather that a more complete study is needed.

SCREENING THE VISION OF THE PRESCHOOL CHILD

The American Optometric Association, through its Committee on Visual Problems of Children and Youth, has prepared this manual as a guide for those individuals--parents, social workers, nurses, teachers, and any other interested participants--who wish to screen the vision of preschool children in some depth by means of readily available and relatively inexpensive materials.

Sufficient evidence has been gathered from many disciplines to make it obvious that there is a need for vision screening of preschool children. The AOA Committee on Visual Problems of Children and Youth has for many years advocated a professional vision examination of all children about to enter school. Various factors such as parental apathy, economic inability, the 20/20 or 20/30 acuity obtained during the physician's general physical examination, and a community attitude which does not recognize the importance of screening, have prevented many preschool children with vision problems from being diagnosed and cared for at a vital stage in their visual development.

Local, state and federal agencies are becoming increasingly aware of the value of preschool screening and its important role in the child's future health and educational success. The American Optometric Association is constantly alert to the vision needs of the citizens of the United States and offers this manual, not as a substitute for existing programs, but as an alternate choice to those programs currently in force and as a stimulus to those groups and individuals who are interested, but not currently engaged in, the vision screening of the preschool child.

Procedure

Because of the differences which exist in geography, culture, and experience, the basic procedures may have to be varied to meet the individual demands of various areas. Valid screening results can best be obtained through workers, volunteer or paid, who are familiar with young children and who genuinely enjoy working with them. As is true in any situation dealing with large numbers of children, the vision screening program must be planned in advance to assure maximum use of facilities and personnel and to provide, as much as possible, a calm and relaxed atmosphere for the children. A cafeteria, gymnasium, resource room, community center, church social hall, in fact any large, quiet and well-ventilated room can be easily adapted for the purpose of vision screening. Whenever possible it is desirable to have professional supervision of the screening program. While there is an obvious shortage of optometric manpower, most local optometric societies will be eager to assist through teaching the various screening procedures to the volunteers and through either furnishing the material used in the program or supplying the sources from which

it may be obtained. In fact, one of the first steps in the planning of a screening program should be to contact the local optometric society for guidance and assistance. In many communities optometrists would be willing to perform ophthalmoscopy, retinoscopy, and other supplementary tests such as ocular motility on the children being screened, lending important additional techniques to the screening battery.

Since one of the most valuable adjuncts to any vision evaluation procedure is a comprehensive case history, it is recommended that the American Optometric Association pamphlet C-10, "Teacher's Guide to Vision Problems," or a similar approved form, be filled out prior to the child's visit to the screening area. This form, incorporating the A, B, C's of vision as originally advanced by Lois B. Bing, O.D., of Cleveland, Ohio, formerly the chairman of the Committee on Visual Problems of Children and Youth of the American Optometric Association, might well be the basis for referral. Some of the symptoms in C-10 are applicable only to children of school age, but many of them may be applied to the preschool child. The completed form should accompany the child and be handed to the individual responsible for the screening. The person performing the screening test should also observe the child and recheck the form. In addition to the form describing the appearance, behavior and complaints--the A, B, C's mentioned previously--an information sheet which has been prepared in advance should accompany the child. Children who are wearing corrective lenses should have their lenses in place during screening procedures.

If after careful observation the child's eyes appear to be red, inflamed, swollen, running, have styes, or turn markedly in or out, the child should be referred without further screening.

The following screening tests are applicable:

1. Visual Recognition: This test, while called visual acuity by some observers, involves a higher degree of visual perception and probably less visual resolution than the Snellen Test. The test may be commercially obtained from the National Foundation for Educational Research in England and Wales (79 Wimpole Street, London, w. 1, England) where it is a portion of a test known as the "Stycar Test," or it can be made by using easily obtainable and inexpensive miniature toys. One set is placed before the child andanother set is displayed to the child from a distance of 10 feet away. The set displayed to the child is mounted on a dull black or dull dark gray background. The screener points to one of the objects and asks the child to name it. If the child cannot name it, he is asked to select the toy from those before him and match it with the one to which the screener is pointing. This is done with each eye. First the left eye is covered with a card, and then the right. Because of the possibility of transferring ocular or skin infections from one child to another, a fresh card should be used for each child.

The toys consist of familiar objects such as a 2-inch car, airplane, chair, doll; a 2½-inch knife, fork, spoon; and a 3½-inch knife, fork and spoon. In certain communities where particular objects are indigenous to the area, such as farming communities, other toys such as farm animals, trucks, and implements may be used. The important thing to observe is that the toys conform to the 2, 2½ and 3½-inch size.

Since the teaching of reading in many communities is geared to color recognition, a refinement of the miniature car test would be to place before the child three of each of the test items in different colors and request that he match the color as well as the toy.

The "Tumbling E" test may also be used as an alternate test with 20/40 in either eye as the failing criterion.

2. Plus Lens Test: The Visual Recognition Test is repeated with the left eye covered and the other looking through a plus 2 diopter sphere. This is repeated with the right eye covered.

3. Prism Test for Binocular Awareness: The child's attention is directed to one of the 3½-inch toys at a distance of ten feet. An 8 diopter prism base up is introduced before either eye, bringing it in from the side. The child is asked what he sees. If he does not respond, ask him how many objects he sees. If he does not respond to this question, ask him if he sees two. If he replies that he sees two, ask him their position. (One object should appear above or below the other.)

4. Nearpoint of Convergence: A penlight is held at the midline and at eye level about 14" from the child's eyes. The child is instructed to watch the light as it is slowly moved closer to his nose. It may be helpful to maintain the child's attention if he is asked to blow out the light. As the light is moved closer to the child's nose the eyes are observed. At some point between the 14" starting distance and the nose, one eye generally "breaks." That is, one eye generally turns out. The eye which breaks and the distance of the penlight from the eyes at the moment of break is recorded. If there is no break, this is also recorded.

5. Polaroid Fly Test for Binocular Awareness at Near: The Polaroid Fly is placed approximately 13" in front of the child. The child is shown the fly first without the polaroid glasses and then the glasses are introduced while the child is observing the fly. Usually the startle reflex or the child's smile or laughter is sufficient evidence that the child is aware of the three dimensional aspect of the fly. If the child does not react spontaneously to the introduction of the polaroid glasses, he is asked to place his finger on "where the wings look like they are."

A simple form should be devised on which to record the information acquired from the vision screening program. Space should be allotted for the child's name, address, age, parents' name, and telephone number. Sufficient space should also be allowed for the recording of the child's actual response to the various tests and whether the tests were passed or failed.

Pass or Fail Criteria

Test #1: If the child properly identifies or matches 50% of the 2½-inch objects, he passes the test.

Note: If color is used and the child cannot match the colors, he is not to be referred, but it should be indicated on his form that there was difficulty in color discrimination.

Test #2: If the child reports that the test objects appear blurred, he passes the test. If he identifies the objects as well with the lens in place as he does without it, the test is failed.

Test #3: If the child fails to see two objects, he fails the test.

Test #4: The child should be able to maintain fixation to at least 6 inches without either eye turning out. If either eye turns out when the light is more than 6 inches from the child's eyes, or if the child reports that he sees two lights when the light is further than 6 inches from his eyes, Test #4 is failed.

Test #5: If the child replies that the Polaroid Fly looks the same with the glasses on as it does with them off, he has failed the test. In pointing to the wings, the fingers should be at a point at least 1½ inches from the actual picture.

VISION SCREENING FORM

Name_____ Age_____

Address_____

Parents' Name_____

Location of screening program_____

Name of screener_____

Has there been previous vision care? ☐ Yes ☐ No ☐ Unknown
(Check one box)

Was there referral on basis of C-10? ☐ Yes ☐ No

1. Visual Recognition Test
   Number of objects named at 10 feet: R--3½"___2½"___2"___
   L--3½"___2½"___2"___

   Number of objects matched at 10 feet: R--3½"___2½"___2"___
   L--3½"___2½"___2"___
   (Fill in only if color matching is used: #right___ # wrong___)

2. Plus Lens Test
   Number of objects named at 10 feet: R--3½"___2½"___2"___
   L--3½"___2½"___2"___

   Number of objects matched at 10 feet: R--3½"___2½"___2"___
   L--3½"___2½"___2"___

   Did the child spontaneously report a blur? ☐ Yes ☐ No

3. Prism Test for Binocular Awareness
   (check response)
   ☐ Spontaneously reported seeing two.
   ☐ Reported seeing two after questioning.
   ☐ Reported seeing only one image.

4. Nearpoint of Convergence
   Deviating or "breaking" eye: ☐ R ☐ L
   Distance at which eye deviated: ___ inches
   Distance at which eyes re-converged: ___ inches

5. Polaroid Fly Test
   Did child spontaneously become aware of depth? ☐ Yes ☐ No
   Did child become aware of depth after questioning? ☐ Yes ☐ No
   Did child touch wings at a point closer to him than the picture? ☐ Yes ☐ No
   If answer is "Yes," record the distance: ___ inches

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